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<u>Final Scientific Report</u>

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Submitted by: R. S. Varga, Principal Investigator
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Kent, OH 44242

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<u>October 1, 1979 - June 30, 1980</u>

Richard S. Varga, Principal Investigator

The research conducted by the above principal investigator during the period October 1, 1979 to June 30, 1980, has resulted in the following research articles which have either appeared in print, or have been accepted in refereed mathematical journals, in this period:

1. M. Lachance, E. B. Saff, and R. S. Varga, "Inequalities for polynomials with a prescribed zero", Math. Zeit. <u>168</u>(1979), 105-116.

2. Richard S. Varga, "Poslednie Rezul'taty v Lineĭnoĭ Algebre i ee Priloženijah", (Russian), Vyčislitel" nye Metody Lineĭnoĭ Algebry, #3, 1978, pp. 5-15.

3. John J. Buoni and Richard S. Varga, "Theorems of Stein-Rosenberg Type", <u>Numerical Mathematics</u> (R. Ansorge, K. Glashoff, B. Werner, eds.), ISNM 49, 65-75, Birkhäuser Verlag, Basel, 1979.

4. N. Anderson, E. B. Saff, and R. S. Varga, "On the Eneström-Kakeya Theorem and Its Sharpness", Linear Algebra and Appl. <u>28</u>(1979), 5-16.

5. M. Lachance, E. B. Saff, and R. S. Varga, "Bounds for incomplete polynomials vanishing at both endpoints of an interval", <u>Constructive Approaches to Mathematical Models</u> (C. V. Coffman and G. J. Fix, eds.), pp. 421-437, Academic Press, Inc., New York, 1979.

6. A. S. Cavaretta, Jr., A. Sharma, and R. S. Varga, "Hermite-Birkhoff interpolation in the n-th roots of unity", Trans. Amer. Math. Soc. <u>259</u>(1980), 621-628.

7. E. B. Saff, and R. S. Varga, "Remarks on some conjectures of G. G. Lorentz", <u>J. Approximation Theory</u> (to appear).

8. E. B. Saff and R. S. Varga, "On incomplete polynomials. II", Pacific J. Math. (to appear).

9. A. S. Cavaretta, Jr., A. Sharma, and R. S. Varga, "Interpolation in the roots of unity: an extension of a Theorem of J. L. Walsh", Resultate der Mathematik (to appear).

10. Michael Neumann and Richard S. Varga, "On the sharpness of some upper bounds for spectral radii of S.O.R. iteration matrices", Numer. Math. (to appear).

11. N. Anderson, E. B. Saff, and R. S. Varga, "An extension of the Eneström-Kakeya Theorem and its sharpness", SIAM J. Math. Anal. (to appear).

12. A. S. Cavaretta, A. Sharma, and R. S. Varga, "Lacunary trigonometric interpolation on equidistant nodes", Proceeding of an Approximation Theory Conference, held in Bonn, West Germany, in August, 1979 (to appear).

13. M. G. de Bruin, E. B. Saff, and R. S. Varga, "On zeros of generalized Bessel polynomials", Indag. Math. (to appear).

14. R. S. Varga, E. B. Saff, and V. Mehrmann, "Incomplete factorizations of matrices and connections with H-matrices", SIAM J. Num. Anal. (to appear).

15. M. G. de Bruin, E. B. Saff, and R. S. Varga, "On two conjectures on the zeros of generalized Bessel polynomials", Proceedings of the Lorentz Conference on Approximation Theory III, held in Austin, TX, in January, 1980 (to appear).

16. E. B. Saff, and J. L. Ullman, and R. S. Varga, "Incomplete polynomials: an electrostatic approach", Proceedings of the Lorentz Conference on Approximation Theory III, held in Austin, TX, in January, 1980 (to appear).

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